

Feder-Werkstoffe - Physikalische und mechanische Eigenschaften

| Kurzname | W.-Nr | Norm | Physikalische und mechanische Eigenschaften | | | | | | | | | | | |
|--------------------------------------|----------------|------------|---|-------------------------------|-----------|-----------|-----------|-----------|-----------|------------------------------|---|--------------------------|------------------|-----------|
| | | | Dichte Kg/dm ³ | E-Modul in kN/mm ² | | | | | | Einsatz- temperatur °C | Zug- Festigkeit N/mm ² | Dicken- bereich mm | Be- schaffung | |
| | | | | Bei RT | 100 °C | 200 °C | 300 °C | 400 °C | 500 °C | | | | | 600 °C |
| Qualitätsstähle | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Edelstähle | | | | | | | | | | | | | | |
| C 60 S | 11.211 | EN 10132-4 | 7,85 | 206 | 202 | - | - | - | - | - | -20...+100 | 1230-1770 | 0,1...2,5 | leicht |
| C 67 S | 11.231 | EN 10132-4 | 7,85 | 206 | 202 | - | - | - | - | - | -20...+100 | 1320-1870 | 0,1...1,5 | leicht |
| C 75 S | 11.248 | EN 10132-4 | 7,85 | 206 | 202 | - | - | - | - | - | -20...+100 | 1400-1950 | 0,1...1,5 | leicht |
| 51 CrV 4 | 18.159 | EN 10132-4 | 7,85 | 206 | 202 | 196 | - | - | - | - | -50...+200 | 1400-2000 | 0,3...80 | leicht |
| | | | | | | | | | | | | | | |
| Korrosionsbeständige Stähle | | | | | | | | | | | | | | |
| X 12 CrNi 17 7 | 14.310 | DIN 17224 | 7,9 | 190 | 186 | 180 | - | - | - | - | -200...+200 | 1100-1500 | 0,2...2,5 | leicht |
| X 7 CrNiAl 17 7 | 14.568 | DIN 17224 | 7,9 | 195 | 190 | 180 | 171 | - | - | - | -200...+300 | 1100-1800 | 0,2...4,0 | erschwert |
| X 5 CrNiMo 17 122 | 14.401 | DIN 17224 | 7,95 | 185 | 181 | 176 | - | - | - | - | -200...+200 | 950-1500 | 0,2...1,6 | schwierig |
| Warmfeste Stähle | | | | | | | | | | | | | | |
| 21 CrMoV 5 7 | 17.709 | DIN 17240 | 7,85 | 206 | 199 | 191 | 182 | - | - | - | -50...+350 | | 2,0...8,0 | erschwert |
| X 22 CrMoV 12 1 | 14.923 | DIN 17240 | 7,7 | 209 | 202 | 194 | 184 | 173 | 162 | - | -50...+500 | 1200-1400 | 1,5...20 | leicht |
| X 39 CrMo 17 | 14.122 | SEW 400 | 7,7 | 209 | 205 | 199 | 192 | 181 | - | - | -50...+400 | 1200-1400 | 0,3...6,0 | leicht |
| X 30 WCrV 5 3 | 12.567 | | 8,2 | 206 | 202 | 196 | 189 | 178 | - | - | -50...+450 | 1200-1400 | 8,0...20 | erschwert |
| | 18.242 | | | | | | | | | | | | | |
| Kupferlegierungen | | | | | | | | | | | | | | |
| CuSn 8 | 21.030 | DIN 17670 | 8,8 | 115 | 110 | - | - | - | - | - | -50...+100 | 590-690 | 0,1...6,0 | leicht |
| | | DIN 17662 | | | | | | | | | | | | |
| CuBe 2 | 21.247 | DIN 17670 | 8,8 | 135 | 131 | 125 | - | - | - | - | -260...+200 | 1270-1450 | 0,1...2,5 | leicht |
| | | DIN 17666 | | | | | | | | | | | | |
| Nickel- und Kobaltlegierungen | | | | | | | | | | | | | | |
| Nicomac 90 | 2.4632 (LW) | | 8,18 | 220 | 216 | 208 | 202 | 193 | 187 | 178 | -200...+700 | >= 1100 | bis 6,35 | schwierig |
| | 24.969 | | | | | | | | | | | | | |
| Inconel X 750 | 24.669 | | 8,28 | 214 | 207 | 198 | 190 | 179 | 170 | 158 | -200...+600 | >= 1170 | bis 6,35 | schwierig |
| Inconel 718 | 24.668 | | 8,19 | 199 | 195 | 190 | 185 | 179 | 174 | 167 | -200...+600 | >= 1240 | bis 6,35 | schwierig |
| Duratherm 600 | - | | 8,5 | 220 | 215 | 208 | 202 | 195 | 188 | - | -200...+550 | 1150-1550 | 0,1...2,0 | schwierig |

Letzte Aktualisierung 26.07.2002

| Feder-Werkstoffe - Chemische Zusammensetzung | | | | | | | | | | | |
|---|-------------|------------|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|
| Kurzname | W.-Nr | Norm | Chem. Zusammensetzung in Gewichts-% | | | | | | | | |
| Stähle für normale Beanspruchung | | | C | Si | Mn | P max. | S max. | Cr | V | Mo | Ni |
| Qualitätsstähle | | | | | | | | | | | |
| Edelstähle | | | | | | | | | | | |
| C 60 S | 11.211 | EN 10132-4 | 0,57...0,65 | 0,15...0,35 | 0,60...0,90 | 0,025 | 0,025 | max. 0,40 | - | max. 0,10 | max. 0,40 |
| C 67 S | 11.231 | EN 10132-4 | 0,65...0,73 | 0,15...0,35 | 0,60...0,90 | 0,025 | 0,025 | max. 0,40 | - | max. 0,10 | max. 0,40 |
| C 75 S | 11.248 | EN 10132-4 | 0,70...0,80 | 0,15...0,35 | 0,60...0,90 | 0,025 | 0,025 | max. 0,40 | - | max. 0,10 | max. 0,40 |
| 51 CrV 4 | 18.159 | EN 10132-4 | 0,47...0,55 | max. 0,40 | 0,70...1,10 | 0,025 | 0,025 | 0,90...1,20 | 0,10...0,20 | max. 0,10 | max. 0,40 |
| Korrosionsbeständige Stähle | | | | | | | | | | | |
| X 12 CrNi 17 7 | 14.310 | DIN 17224 | max. 0,12 | max. 1,5 | max. 2,0 | 0,045 | 0,03 | 16,0...18,0 | - | max.0,8 | 6,0...9,0 |
| X 7 CrNiAl 17 7 | 14.568 | DIN 17224 | max. 0,09 | max. 1,0 | max. 1,0 | 0,045 | 0,03 | 16,0...18,0 | - | - | 6,5...7,75 |
| X 5 CrNiMo 17122 | 14.401 | DIN 17224 | max. 0,07 | max. 1,0 | max. 2,0 | 0,045 | 0,03 | 16,5...18,5 | - | 2,0...2,5 | 10,5...13,5 |
| Warmfeste Stähle | | | | | | | | | | | |
| 21 CrMoV 5 7 | 17.709 | DIN 17240 | 0,17...0,25 | 0,15...0,35 | 0,35...0,85 | 0,03 | 0,035 | 1,20...1,50 | 0,25...0,35 | 0,65...0,80 | - |
| X 22 CrMoV 12 1 | 14.923 | DIN 17240 | 0,18...0,24 | 0,10...0,50 | 0,30...0,80 | 0,035 | 0,035 | 11,0...12,5 | 0,25...0,35 | 0,80...1,20 | 0,30...0,80 |
| X 39 CrMo 17 | 14.122 | SEW 400 | 0,33...0,43 | max. 1,0 | max. 1,0 | 0,045 | 0,03 | 15,5...17,5 | - | 0,90...1,30 | max. 1,0 |
| X 30 WCrV 5 3 | 12.567 | | 0,25...0,35 | 0,15...0,30 | 0,20...0,40 | 0,035 | 0,035 | 2,20...2,50 | 0,50...0,70 | - | W: 4,00...4,50 |
| | 18.242 | | | | | | | | | | |
| Kupferlegierungen | | | Sn | P | Be | Ni + Co | Cu | | | | |
| CuSn 8 | 21.030 | DIN 17662 | 7,5...9,0 | 0,01...0,4 | - | - | Rest | | | | |
| | | DIN 17670 | | | | | | | | | |
| CuBe 2 | 21.247 | DIN 17666 | - | - | 1,8...2,1 | 0,2...0,6 | Rest | | | | |
| | | DIN 17670 | | | | | | | | | |
| Nickel- und Kobaltlegierungen | | | Ni | Cr | Co | Ti | Al | C | Si | Mn | Fe |
| Nimonic 90 | 2.4632 (LW) | | Res | 18,0...21,0 | 15,0...21,0 | 2,0...3,0 | 1,0...2,0 | 0,13 max. | 1,0 max. | 1,0 max. | 1,5 max. |
| | 24.969 | | | | | | | | | | |
| Inconel X 750 | 24.669 | | 70,0 min. | 14,0...17,0 | 1,0 max. | 2,25...2,75 | 0,40...1,00 | 0,08 max. | 0,50 max. | 1,0 max. | 5,0...9,0 |
| Inconel 718 | 24.668 | | 50,0...55,0. | 17,0...21,0 | 1,0 max. | 0,70...1,15 | 0,3...0,7 | 0,02...0,08 | 0,35 max. | 0,35 max. | Rest |
| Duratherm 600 | - | | Rest | 12 | 41,5 | 2 | 0,7 | - | - | - | 8,7 |
| Nickel- und Kobaltlegierungen (Forts.) | | | Cu | Zr | S | P | B | Nb+Ta | Mo | W | |
| Nimonic 90 | 2.4632 (LW) | | 0,2 max. | 0,15 max. | 0,015 max. | - | 0,02 max. | - | - | - | |
| | 24.969 | | | | | | | | | | |
| Inconel X 750 | 24.669 | | 0,5 max. | - | 0,01 max. | 0,015 max. | - | 0,7...1,2 | - | - | |
| Inconel 718 | 24.668 | | 0,2 max. | - | 0,015 max. | 0,015 max. | 0,006 max. | 4,8...5,5 | 2,8...3,3 | - | |
| Duratherm 600 | - | | - | - | - | - | - | - | 4 | 3,9 | |

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